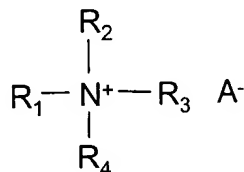


WHAT IS CLAIMED IS:

1. A wiper comprising a substrate and a sanitizing formulation applied to said substrate in an amount from about 150% to about 600% of the dry weight of the wiper, wherein said sanitizing formulation comprises water and between about 0.01% by weight to about 1% by weight of an antimicrobial agent that includes a quaternary ammonium compound, wherein said sanitizing formulation is capable of being released from said substrate as a solution such that said quaternary ammonium compound is present within said solution in an amount less than about 2000 parts per million of said solution, and wherein the wiper exhibits a log reduction for *E. Coli* of at least about 2.

2. A wiper as defined in claim 1, wherein said quaternary ammonium compound has the following formula:

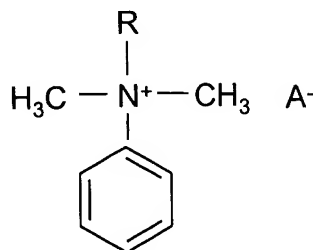


wherein,

R_1 , R_2 , R_3 , and R_4 are independently selected from the group consisting of H, C_1 - C_{30} alkyl, C_1 - C_{30} alkenyl, C_1 - C_{30} alkylethoxy, C_1 - C_{30} alkylphenoethoxy, and combinations thereof; and

A is selected from the group consisting of halogens; methosulfates, phosphates, and combinations thereof.

3. A wiper as defined in claim 1, wherein said quaternary ammonium compound has the following formula:



wherein,

R is a C₈-C₁₈ alkyl group; and

A is a halogen atom.

5 4. A wiper as defined in claim 1, wherein said antimicrobial agent comprises between about 0.01% to about 0.4% by weight of said sanitizing formulation.

5. A wiper as defined in claim 1, wherein said antimicrobial agent comprises between about 0.1% to about 0.4% by weight of said sanitizing formulation.

10 6. A wiper as defined in claim 1, wherein said sanitizing formulation further comprises a sequestrant in an amount between about 0.01% to about 5% by weight of said sanitizing formulation.

7. A wiper as defined in claim 1, wherein said sanitizing formulation further comprises a nonionic surfactant.

15 8. A wiper as defined in claim 7, wherein said nonionic surfactant comprises between about 0.01% to about 1% by weight of said sanitizing formulation.

20 9. A wiper as defined in claim 1, wherein said sanitizing formulation further comprises between about 0.001% to about 30% by weight of non-aqueous solvent.

10. A wiper as defined in claim 1, further comprising between about 0.001% to about 5% by weight of preservative.

11. A wiper as defined in claim 1, wherein the pH of said sanitizing formulation is greater than about 8.

25 12. A wiper as defined in claim 1, wherein the pH of said sanitizing formulation is between about 9 to about 12.

13. A wiper as defined in claim 1, wherein the wiper exhibits a log reduction for *E. Coli* of at least about 3.

30 14. A wiper as defined in claim 1, wherein the wiper exhibits a log reduction for *E. Coli* of at least about 4.

15. A wiper as defined in claim 1, wherein the wiper exhibits a log reduction for *E. Coli* of at least about 5.

16. A wiper as defined in claim 1, wherein the wiper exhibits a log reduction for *S. Aureus* of at least about 2.

17. A wiper as defined in claim 1, wherein the wiper exhibits a log reduction for *S. Aureus* of at least about 3.

18. A wiper as defined in claim 1, wherein the wiper exhibits a log reduction for *S. Aureus* of at least about 4.

19. A wiper as defined in claim 1, wherein the wiper exhibits a log reduction for *S. Aureus* of at least about 5.

20. A wiper as defined in claim 1, wherein the wiper exhibits a Kill Efficiency Ratio of at least about 10.

21. A wiper as defined in claim 1, wherein the wiper exhibits a Kill Efficiency Ratio of at least about 100.

22. A wiper as defined in claim 1, wherein the wiper exhibits a Kill Efficiency Ratio of at least about 400.

23. A wiper as defined in claim 1, wherein the wiper exhibits an Antimicrobial Reduction of less than about 95%.

24. A wiper as defined in claim 1, wherein the wiper exhibits an Antimicrobial Reduction between about 60% to about 80%.

25. A wiper as defined in claim 1, wherein said quaternary compound is capable of being released into said solution in an amount of between about 150 to about 400 parts per million of solution.

26. A wiper as defined in claim 1, wherein said substrate is a nonwoven fabric.

27. A wiper comprising a nonwoven fabric and a sanitizing formulation applied to said nonwoven fabric in an amount from about 150% to about 600% of the dry weight of the wiper, said sanitizing formulation comprising between about 0.01% by weight to about 0.4% by weight of at least one benzalkonium halide, wherein said sanitizing

formulation is capable of being released from said nonwoven fabric into a solution such that said benzalkonium halide is present within said solution in an amount less than about 2000 parts per million of said solution, and wherein the wiper exhibits a log reduction for *E. Coli* and *S. Aureus* of at least about 3.

28. A wiper as defined in claim 27, wherein said benzalkonium halide comprises between about 0.1% to about 0.4% by weight of said sanitizing formulation.

29. A wiper as defined in claim 27, wherein said sanitizing formulation further comprises sequestrant in an amount between about 0.01% to about 1.5% by weight of said sanitizing formulation.

30. A wiper as defined in claim 27, wherein said sanitizing formulation further comprises nonionic surfactant in an amount between about 0.01% to about 1% by weight of said sanitizing formulation.

31. A wiper as defined in claim 27, wherein said sanitizing formulation further comprises non-aqueous solvent in an amount between about 1% to about 15% by weight of said sanitizing formulation.

32. A wiper as defined in claim 27, wherein the wiper exhibits a log reduction for *E. Coli* of at least about 4.

33. A wiper as defined in claim 27, wherein the wiper exhibits a log reduction for *S. Aureus* of at least about 4.

34. A wiper as defined in claim 27, wherein said benzalkonium chloride is capable of being released into said solution in an amount of between about 150 to about 400 parts per million of solution.

35. A wiper comprising a nonwoven fabric and a sanitizing formulation applied to said nonwoven fabric in an amount from about 150% to about 600% of the dry weight of the wiper, said sanitizing formulation comprising between about 0.01% by weight to about 0.4% by weight of at least one benzalkonium halide, wherein said sanitizing formulation is capable of being released from said nonwoven fabric as a

solution such that said benzalkonium halide is present within said solution in an amount less than about 2000 parts per million of said solution, and wherein the wiper exhibits a Kill Efficiency Ratio of at least about 100.

36. A wiper as defined in claim 35, further comprising a preservative, a sequestrant, a non-aqueous solvent, a nonionic surfactant, or combinations thereof.

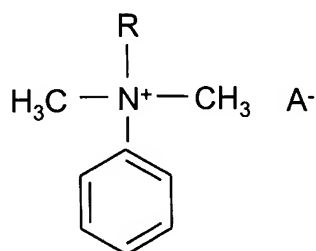
37. A wiper as defined in claim 35, wherein the wiper exhibits a Kill Efficiency Ratio of at least about 200.

38. A wiper as defined in claim 35, wherein said benzalkonium chloride is capable of being released into said solution in an amount of between about 150 to about 400 parts per million of solution.

39. A method for sanitizing a surface, said method comprising:
providing a wiper that contains a substrate applied with a sanitizing formulation in an amount from about 150% to about 600% of the dry weight of the wiper, said sanitizing formulation comprising between about 0.01% by weight to about 0.4% by weight of at least one quaternary ammonium compound; and

moving said wiper across the surface such that at least a portion of said sanitizing formulation is released from said wiper to form a released solution, said released solution containing less than about 2000 parts per million of said quaternary ammonium compound, said released solution exhibiting a log reduction for *E. Coli* of at least about 2.

40. A method as defined in claim 39, wherein said quaternary ammonium compound has the following formula:



wherein,

R is a C₈-C₁₈ alkyl group; and

A is a halogen atom.

5 41. A method as defined in claim 39, wherein said antimicrobial agent comprises between about 0.1% to about 0.4% by weight of said sanitizing formulation.

42. A method as defined in claim 39, wherein said sanitizing formulation further comprises sequestrant in an amount between about 0.01% to about 5% by weight of said sanitizing formulation.

10 43. A method as defined in claim 39, wherein said sanitizing formulation further comprises nonionic surfactant in an amount between about 0.01% to about 1% by weight of said sanitizing formulation.

15 44. A method as defined in claim 39, wherein said sanitizing formulation further comprises between about 0.001% to about 30% by weight of non-aqueous solvent.

45. A method as defined in claim 39, wherein said sanitizing formulation further comprises between about 0.001% to about 5% by weight of preservative.

20 46. A method as defined in claim 39, wherein the released solution exhibits a log reduction for *E. Coli* and *S. Aureus* of at least about 3.

47. A method as defined in claim 39, wherein the released solution contains between about 150 to about 400 parts per million of said quaternary ammonium compound.

25 48. A method as defined in claim 39, further comprising removing said wiper from a resealable container prior to wiping the surface.

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